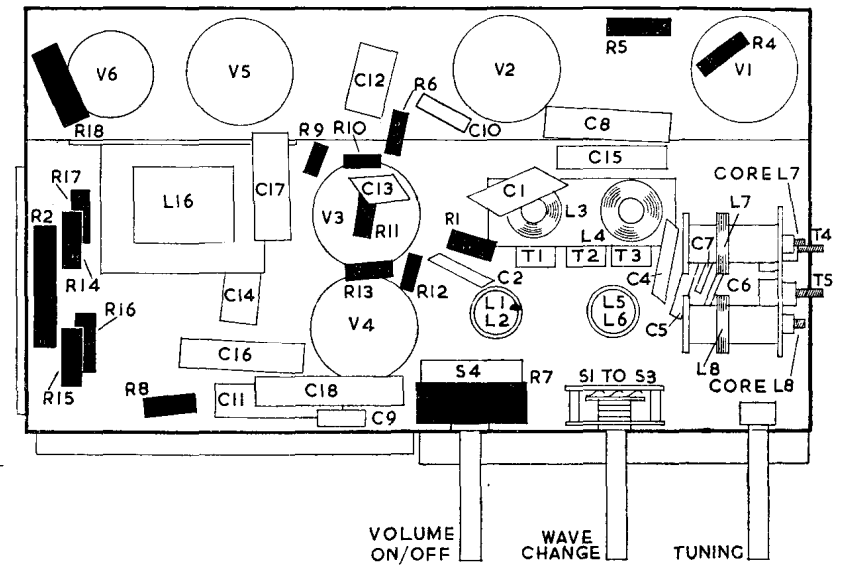
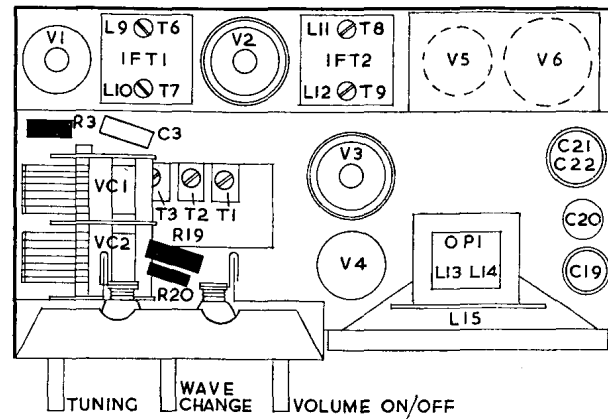
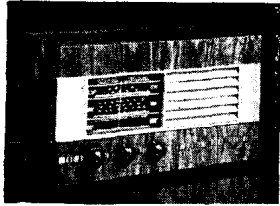


# AMPLION DELEGATE HU610



## RESISTORS

R	Ohms	Watts	R	Ohms	Watts	R	Ohms	Watts
1	4.7K	1W	8	12 meg	1W	15	22K	1W
2	25K	1W	9	100K	1W	16	180	1W
3	470K	1W	10	1 meg	1W	17	33	1W
4	56K	1W	11	3.3 meg	1W	18	50	1W
5	22K	1W	12	180K	1W	19	50	1W
6	56K	1W	13	56K	1W	20	220	1W
7	500K Potentiometer with SP Switch		14	22K	1W			

Five-valve, three-waveband table superhet for operation on 110 to 250 volts AC/DC mains. Fitted with permanently attached "throwout" type aerial. In walnut veneer cabinet. Manufactured by Amplion (1932) Ltd., 230, Tottenham Court Road, London, W1.

V1-12K8GT  
G2 G4  
75v 4.7ma  
A 225v  
75ma  
H  
K O.V.  
TOP CAP GRID 1h

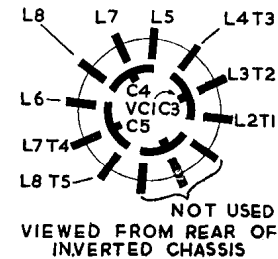
V2-12K7GT  
G2 75v  
1.4ma  
A 225v  
5.6ma  
H  
K O.V.  
TOP CAP GRID 1

V3-12Q7GT  
Sig D  
AVCD  
A 100v  
1.3ma  
H  
K O.V.  
TOP CAP GRID

V4-35 L6  
G2 100v  
1.2ma  
A 215v  
37ma  
H  
K 6.5v

V5-35 Z4  
A 225v RMS  
H  
K 246v 60ma

V6-BARRATTER  
DIAL LAMPS  
185Ω  
3.5v  
15A

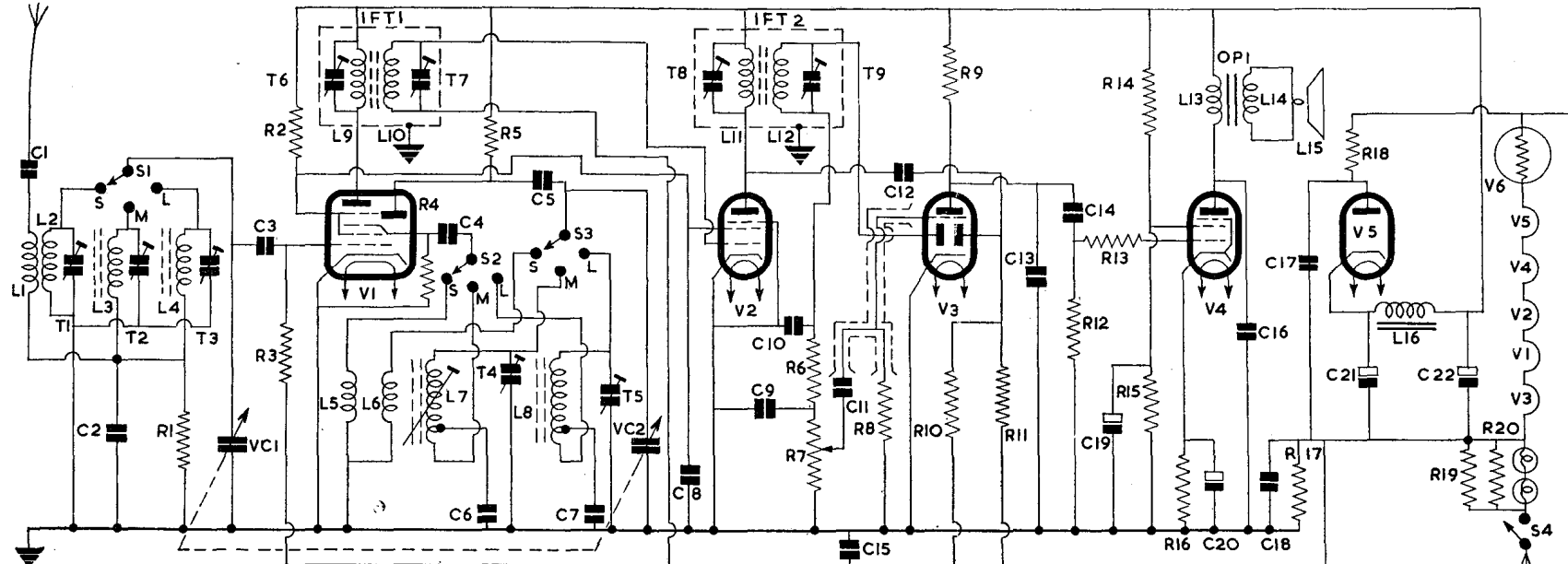


## CAPACITORS

C	Mfds	Type
1	500pF Silver Mica	
2	2000pF Silver Mica	
3	100pF Mica	
4	50pF Silver Mica	
5	50pF Silver Mica	
6	300pF Silver Mica	
7	150pF Silver Mica	
8	.1 Tubular 350V	
9	100pF Mica	
10	100pF Mica	
11	.01 Tubular 1000V	
12	50pF Silver Mica	
13	500pF Mica	
14	.01 Tubular 1000V	
15	.01 Tubular 1000V	
16	.01 Tubular 1000V	
17	.05 Tubular 500V	
18	.1 Tubular 350V	
19	4 Electrolytic 350V	
20	25 Electrolytic 25V	
21	12 Electrolytic 350V	
22	12 Electrolytic 350V	

## INDUCTORS

L	Ohms
1	15
2	Very Low
3	2.5
4	11.5
5	22
6	Very Low
7	3.25
8	7.25
9	2.25
10	2.25
11	1.8
12	1.8
13	280
14	4
15	2.5
16	250



## AMPLION DELEGATE

### HU610—Continued

**CIRCUIT** consists of a triode-hexode frequency changer V1 coupled by a capacity-tuned iron dust core transformer to the IF amplifier V2, a variable-mu RF pentode. A second capacity-tuned iron core transformer couples V2 to a double-diode triode V3 which provides signal rectification, AVC and AF amplification. V3 is resistance-capacity coupled to the pentode output valve V4. Output from V4 is fed to a 5-in. PM speaker. High tension is provided, on AC-mains, from an indirectly heated half-wave rectifier V5. A barretter V6 provides a regulated current for the valve heaters on 200-250 volt mains supplies. On 110 volt working V6 needs to be shorted out.

**Aerial**, consisting of approximately 36 ft. of insulated wire, is coupled through C1 to the SW aerial coupling coil L1 and to bottom ends of tuned coils L3 (MW), L4 (LW). R1, C2, are components associated with bottom end coupling used on MW and LW bands. S1 connects tuned circuits L2 (SW), L3 (MW), and L4 (LW), to aerial tuning capacitor VC1 and through C3 to grid of V1. T1, T2, T3 are aerial trimmers. Cathode of V1 is connected to chassis. AVC and a small standing bias is fed to grid through R3.

Screen voltage is obtained from R2 decoupled by C8. L9, T6, forming the primary of IFT1, are in the anode circuit of V1.

**Oscillator** is connected in a tuned-anode parallel fed HT circuit. L6 (SW), L7 (MW), and L8 (LW), are the tuned coils switched by S3 to oscillator tuning capacitor VC2 and through C5 to anode of triode oscillator portion of V1. T4, T5 are MW and LW, trimmers and C6, C7, padders. No trimmer or padder is provided for the SW range. R5 is oscillator anode load. S2 switches reaction voltages, developed on L6 (SW) and on portion of L7, L8 for MW and LW bands, to oscillator grid through C4. R4, C4 provide leak-condenser bias for grid.

**IF Amplifier** operates at 465 kc/s. L10, T7, the secondary of IFT1, applies signal to grid of IF amplifier V2. Cathode is at chassis potential and a small standing bias, together with AVC voltage is fed to grid from R10, decoupled by C15. Screen voltage is obtained from R2 decoupled by C8, L11, T8, forming the primary of IFT2, are in the anode circuit.

**Signal Rectifier**. L12, T9, the secondary of IFT2, applies signal to one diode of V3. R7, the volume control, is the detector diode load and R6, C9, C10 form an IF filter.

**Automatic Volume Control**. C12 feeds signal at anode V2 to second diode of V3. R11 is the diode load. Bottom end of R11 is connected to R17, in the HT negative lead to chassis, to provide a delay voltage for the AVC diode. The cathode of V3 is at chassis potential. R10, C15 provide AVC line decoupling.

**AF Amplifier**. C11 feeds signal from volume control R7 to grid of triode section V3. R8 is grid resistor and bias for triode grid is developed on C11. R9 is the anode load and C13 anode bypass.

**Output Stage**. C14 feeds signal at anode V3 to grid of pentode output valve V4 through grid

stopper R13. R12 is grid resistor. Cathode bias is provided by R16 decoupled by C20. Screen voltage is obtained from potential dividing network R14 and R15 decoupled by C19.

L13, the primary of OP1, the output matching transformer, is in the anode circuit of V4. C16 prevents rise in impedance of L13 at high frequencies. L14, the secondary of OP1, feeds into speech coil L15 of the 5-in. PM loudspeaker.

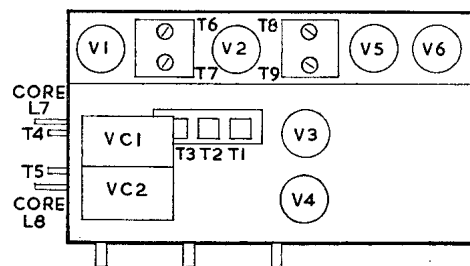
**High Tension** is provided on AC supplies by an indirectly heated half-wave rectifier V5. Its anode voltage is obtained from the mains supply and is fed to anode through limiter R18. C17 is fitted to eliminate modulation hum. R17, decoupled by C18, connected in the HT negative return to chassis provides delay bias for AVC line and standing bias for grids of V1 and V2. In some earlier models of this receiver bias is also fed to triode grid of V3. In these sets, R8 is connected to top of R17 instead of the chassis. L16, C21, C22 provide choke-capacity smoothing of the HT supply.

**Heaters of V1 to V5 and the two dial lamps** are connected in series and obtain their current, on 200/250V mains supply, through regulating barretter V6. When 110V mains supply is used, V6 is removed and pins 2 and 8 of its valve holder are shorted. Dial lamps are shunted by R19 and R20. S4, ganged to the volume control, is the ON/OFF switch.

**Removal of chassis from cabinet**. Remove three control knobs and rear panel of cabinet. Remove single chassis bolt on underside of case and the two wood screws fastening ends of chassis to wood slat at either side of back of cabinet. Withdraw chassis carefully, tilting it to give clearance for the top of dial plate assembly. Unsolder lead from sub-chassis wiring where it is joined to aerial lead.

### TRIMMING INSTRUCTIONS

Apply signal as stated below	Tune Receiver to	Trim in Order stated for Max. Output
(1) 465 kc/s to top cap V1 via .01 capacitor	—	T9, T8, T7, T6.
(2) 150 kc/s to AF lead via dummy aerial	2000 metres	Core L8
(3) 300 kc/s as above..	1000 metres	T5, T3, Repeat (2) and (3)
(4) 600 kc/s as above..	500 metres	Core L7
(5) 1.5 mc/s as above..	200 metres	T4, T2, Repeat (4) and (5)
(6) 12 mc/s as above..	25 metres	T1



## Under control..

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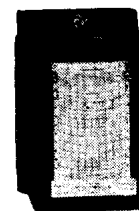
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